

REMARKS

At the outset, it is important to an understanding of the present invention to be aware of the term "slurry" as used in the present application and in the present claims. As indicated on page 4 of the present application, the invention provides a stable, "flowable slurry" which contains spherical alkaline metal bicarbonate particles having certain characteristics in a liquid medium. It is a stable, flowable slurry without the need of a suspending aid which provides the advantages described on pages 1-3 of the specification including the ability to form dialyzate solutions.

The term "slurry" is defined as "a thin paste produced by mixing some materials (e.g. Portland cement), with water, sufficiently fluid to flow viscously [Larousse Dictionary of Science and Technology (1995) pg. 1010 – copy enclosed]. [Webster's Third New International Dictionary (2002) pg. 2148 – copy enclosed] defines slurry as a watery mixture or suspension of insoluble matter. Thus, the term "slurry" inherently includes the combination of solid material and a liquid medium in which the resulting product is "flowable". The term "flow" means to move with a continual change of place among the constituent particles or parts [Webster's Third New International Dictionary (2002) pg. 875 – copy enclosed].

Thus, the term "flowable" requires a continual change of place. Applicants have amended the claims to emphasize what is inherent in a slurry (i.e. that the slurry is flowable). As is apparent from the discussion below, the cited reference

does not teach or suggest incorporating bicarbonate particles into a slurry. Referring to the Office Action, Applicants gratefully acknowledge withdrawal of the rejection of claim 7 under 35 U.S.C. Section 112 and the rejection of claims 3-6 and 23-25 over the previous combination of Vanzo et al. in view of Coulter et al. and Masters et al.

Claims 3-16 and 23-25 stand rejected as obvious over Winston et al. (U.S. Patent No. 4,623,536). The Office Action states that Winston et al. teaches a toothpaste composition containing at least 60% sodium bicarbonate particles having a particle size of less than 25 microns. The Office Action further states that conventional adjuvants such as humectants, thickening agents, fluoridation agents, flavors and sweeteners may be added. Water is stated to be included in amounts ranging from 0 to 25% by weight as disclosed at column 4, lines 12-17. The Office Action states that the prior art is silent with respect to surface area, bulk density and zeta potential. However, the Office Action further states that patentability cannot be imparted to the instant claims without further proof of unexpected results that arise from these parameters. The rejection is hereby traversed and reconsideration is respectfully requested.

As previously indicated, the present invention is directed in part to a slurry comprising from about 50 to about 80% by weight of substantially spherical alkaline metal bicarbonate particles dispersed in a liquid medium. Applicants submit that the preamble of the claim "flowable slurry" is important to an understanding of the claim coverage because the claim requires that the bicarbonate and the liquid medium are

in a flowable condition. As indicated in the examples, especially Example 1 (page 10, lines 1-2), the preparation of the micron-sized particles may be achieved by a wet mill process which results in a stable, flowable slurry. It is further noted on page 10 (last three lines) that the bicarbonate charge is 70% and the water charge is 30% by weight of the total charge. As indicated on page 11, beginning at line 3, the resulting slurry initially has a flowable consistency, and after 30 minutes, the resulting slurry maintains a flowable consistency.

The Winston et al. reference is directed to a toothpaste which is not a flowable slurry. The reference discloses elevated levels of sodium bicarbonate (60-75% by weight) incorporated into a toothpaste (column 3, lines 20-25). However, at no time is sodium bicarbonate first formed into a flowable slurry with a liquid medium. Attention is directed to the toothpaste composition appearing in the table at the bottom of column 5 of the reference. Ingredients of the toothpaste are sodium bicarbonate, humectant, thickener, surfactant, flavoring agent and sweetener. Beginning at the top of column 6, there is provided a method (the only method disclosed in the reference) for preparing a toothpaste. In particular, the thickener and the humectant are first mixed together. There is then provided a water solution containing the sweetener, surfactant and fluoride which is added to the thickener-humectant mixture. Thus, prior to the time that sodium bicarbonate is added to the toothpaste composition, water is provided in the form of a solution containing sweetener, surfactant and fluoride.

As indicated at column 6, lines 6-7 the sodium bicarbonate is stirred into the mixture. The sodium bicarbonate which is added is in the form of dry particles (powder). Nowhere is there any teaching or suggestion that sodium bicarbonate is combined with a liquid medium to form a slurry.

After the sodium bicarbonate is added (and the flavor oil) the composition is deaerated under vacuum to release all gases. The resulting composition is a toothpaste composition which is properly characterized as a gel or semi-solid, not a slurry. The toothpaste composition does not flow and therefore is not a slurry. Accordingly, Winston et al. does not teach or suggest the presently claimed invention.


Applicants' note that claim 24 refers to a method of using the presently claimed flowable slurry of claim 3 with other materials to form a bicarbonate containing product. One of the select group of such products is a toothpaste. However, it is clear that the toothpaste product that may be formed by the claimed method first requires a slurry of the bicarbonate (not bicarbonate powder) which is combined with other materials. Example 2 of the present application is directed to a preparation of an oral care product and specifically a toothpaste. As indicated on page 13, lines 1 and 2, an alkaline metal bicarbonate slurry is formed separate and apart from the other ingredients.

It is therefore submitted that the present application claims a slurry which is neither taught nor suggested by the prior art of record. Furthermore, the prior art does not teach the use of such a slurry to form various products including toothpaste. Instead, the prior art teaches the use of sodium bicarbonate particles in combination with other ingredients to form a toothpaste which is not a slurry.

In view of the foregoing, Applicants submit that the present application is in condition for allowance and early passage to issue is therefore deemed proper and is respectfully requested.

It is believed that no fee is due in connection with this matter. However, if any fee is due, it should be charged to Deposit Account No. 23-0510.

Respectfully submitted,



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sludging (*Build*) (1) Free-running mud. (2) The process of filling the crevices left in the dried clay of an embankment formed by the method of flood flanking.

slug (*Glass*) Any non-fibrous glass in a glass-fibre product.

slug (*NucEng*) Unit of fuel in nuclear reactor, either rod or slab of fissile material encased in a hermetic can of Al, Be, Magnox, Zr, or stainless steel. Also *cartridge*. See *fuel rod*.

slug (*Phys*) Unit of mass in the gravitational system of units. A force of 1 lbf (pound-force) acting on a mass of 1 slug gives it an acceleration of 1 ft s^{-2} . See *fundamental dynamical units*.

slug (*Telecomm*) Thick copper band, comparable with a portion of a winding on a telephone-type relay which, through induced eddy currents, retards the operation and fall-off of the relay.

slug tuning (*Telecomm*) Alteration of inductance in radio-frequency tuning circuits, by inserting a magnetic core or a copper disk or cylinder.

sluice (*Build*) A water channel equipped with means of controlling the flow, enabling a sudden rush of water to be used at harbours or canal locks for the purpose of cleaning out silt, mud etc, obstructing navigation.

sluice (*MinExt*) A long trough for washing goldbearing sand, clay, or gravel. Also *launder*, *sluice box*.

sluice gate (*Build*) A barrier plate free to slide vertically across a water channel to control the flow.

sluicing (*Build*) The process of deepening a navigation channel by discharging water from a reservoir through a sluice.

slump (*Geol*) Downslope gravity movement of unconsolidated sediments, esp in a subaqueous environment.

slumping (*NucEng*) The movement of molten fuel; not necessarily as the result of an accident but most dramatically seen after the Chernobyl accident in the Ukraine.

slump test (*CivEng*) A test for the consistency of concrete, made with a metal mould in the form of a frustum of a cone with the following internal dimensions; bottom diameter 200 mm (8 in), top diameter 100 mm (4 in), height 300 mm (12 in). This is filled with the concrete, deposited and punned in layers 100 mm (4 in) thick, and then the mould is removed and the height of the specimen measured when it has finished subsiding.

slur (*Print*) A printing fault in which the image lacks sharpness, caused by drag or movement of the paper, plate or forme, blanket or image carrier or combination thereof.

slurry (*MinExt*) A thin paste produced by mixing some materials, esp Portland cement, with water, sufficiently fluid to flow viscously. Used eg to repair (*fettle*) slag-eroded brickwork in smelting furnace etc.

slurry reactor (*NucEng*) One in which fuel or blanket material exists as a slurry carried by the coolant fluid.

slushed-up (*Build*) A term applied to brickwork the joints of which are filled with mortar.

slushing compound (*Eng*) A rust-inhibiting liquid composition consisting of mineral oil and anti-corrosive additives, such as barium petroleum sulphonates.

slush moulding (*Plastics*) Method based on (1) injecting metal into a die in the pasty stage between *liquidus* and *solidus* and (2) using certain plastics, particularly polyvinyl chloride, in *plastisol* form. This is placed in a hollow heated mould which is rotated until the paste forms the solid replica of the mould configuration. Used, eg for dolls' heads.

slush pulp (*Paper*) Pulp which is pumped direct from the pulp mill to the paper mill for use without passing through the pulp drying stage.

Sm (*Chem*) Symbol for samarium.

small bayonet cap (*ElecEng*) A bayonet cap of about 16 mm (0.75 in) diameter; used for small lamps, eg automobile head and side lamps.

small-bore (*Build*) Term applied to pump-assisted hot water central heating systems with 0.5 in or 15 mm copper or stainless steel pipes.

small capital (*Print*) A letter having the height of a lower-case letter in a manuscript or proof by two lines and even small caps.

small circle (*Maths*) A section of a sphere passing through its centre.

small Edison screw-cap (*ElecEng*) cap; having a screw-thread of about 1/16 in diameter and about 3.5 threads per inch.

small nuclear RNA (*Biol*) Discrete set of small RNA molecules found in ribonucleoprotein particles are responsible for processing *HARN*.

small offset (*Print*) term applied to lithographic machines with a sheet size of about 375 x 500 mm.

small pica (*Print*) An old type size, equal to 12 point.

smallpox (*Med*) An acute, highly infectious disease characterized by fever, severe headache and a rash which is successively macular and pustular, affecting chief parts of the body. Until recent times a deadly killing disease of man but has now been variola.

smallpox vaccination (*Immun*) Method of inducing active immunity against smallpox (variola) by Jenner in Gloucestershire, UK, in 1776. Since smallpox was eliminated on a world scale, it is immensely important historically. Vaccine prepared from vesicular lesions of calves or sheep (more recently from *Calmette-Guérin* virus). This virus shares cross-reactivity with variola virus and therefore induces protective immunity against smallpox. Vaccination is performed by injecting live vaccinia virus into a site in the dermis of the skin. Successful primary vaccination is followed by a booster dose 6-9 days later, reaching a maximum of 100% immunity which subsides leaving a residual protective immunity, which depends on the ability to mount a delayed type reaction. Infected cells, gradually declines and is needed at intervals of about 3 years. Immunity is present the local reaction to revaccination may be accelerated, so that it develops at the fourth to fifth day, and its height on the seventh day. Rare cases of generalized vaccinia, which occurred in atopic eczema (which interferes with the local delayed hypersensitivity reaction to progressive vaccinia particularly if cell-mediated immunity was deficient due to disease or to drug). Very rarely post-vaccinal encephalomyelitis, mostly likely to occur after primary vaccination in infants.

smalls (*MinExt*) See *riddle*.

small-scale integration (*Comp*) A technology for integrating logic gates. Abbrev *SSI*.

small-signal parameters (*Electronics*) Parameters of a device or system for small signals.

smallwares (*Textiles*) General name for narrow ribbons and other narrow fabrics woven on narrow looms or braiding machines.

smaltite (*Min*) Cobalt arsenide, a mineral used in the manufacture of a system and usually associated with arsenide.

smaragdite (*Min*) A fibrous green mineral which is amorphous after pyroxene in such rocks.

smart (*Aero*) Originally applied to guided bombs for attacking point targets, a device showing 'artificial intelligence'.

smart card (*Telecomm*) A card similar to a credit card, containing a microcontroller, memory and a communications interface. Contacts on the card transfer data when it is inserted into a reader.

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SYN CUNNING, CRAFTY, TRICK WILY, ARTFUL: *SLY* suggests *de* of candor or underhandedness; mines faith in our allies and friends; *SLY* fellows to be watched — apply to an overreaching circle of the low intelligence and use (he always slipping out at night these naturals — Dorothy Says likes) — Chervant can always like" — Charles Kingsley) *c* at deceptive scheme and strat (the Nazi insanity turned this crafty plotter, collector of illenatural convoys, distributor of Lehrman) (as truculent, as legal subterfuge as the (Josephson) *TRICKY* may indicate the glitter of chivalry lay the Green) (he avoided the mean honorable foe — W.C.Ford) *PO* shrewdness and concealment of firm and the polishing of maritiously or underhandedly pseudosecretiveness — Edgar Johnson) of respect for law and government (republicanism made its appearance) *TRUL* and *WILY* describe what is cunning or astute strategist (the guileful heart and the Morris) (mistaking the light for the treacherous reefs, there to be reality shored) — *Amer. Guide Ser* *c* calculating crafty deception tacticians (if you can keep her fr. her; she's that *artful* sh. get it you know it — Samuel Butle under *artful* urging, began to blit) — *Amer. Guide Series* *c* *TR* *PT* *IT* *US* *SECRETLY* (read it in names — A.C.Spectorsky) (ge ch)

SLIP, SLID; slyed; slied; slying; slipping, sliding usu. used with *on*, *out*, *bank* — *Everybody's* *slip* sloppy

boots *slip* *n* *pl* but *sing* in *com* person; *exp* : one who is cuing, diverting way to *SCAMP*, *slip* him — W.S.Gilbert) (an ador. inen naughty but always forgiv)

GOOSE *n* : SHELDRAKE *adv* *slip* *slily* *adv* [ME *slily*, fr. s. *slif* : *SHREWDLY* (pointed his finger — C.B.Shaw) *b* : with *bar* her insolent condolence carrier — Charles Kingsley) *c* *TR* *PT* *IT* *US* *SECRETLY* (glanced — (in i) (T.Moore) (in injected comi)

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